

June 1991

Regulation--and Contract--in Environmental Law

Richard A. Epstein
University of Chicago

Follow this and additional works at: <https://researchrepository.wvu.edu/wvlr>



Part of the [Environmental Law Commons](#)

Recommended Citation

Richard A. Epstein, *Regulation--and Contract--in Environmental Law*, 93 W. Va. L. Rev. (1991).
Available at: <https://researchrepository.wvu.edu/wvlr/vol93/iss4/3>

This Article is brought to you for free and open access by the WVU College of Law at The Research Repository @ WVU. It has been accepted for inclusion in West Virginia Law Review by an authorized editor of The Research Repository @ WVU. For more information, please contact ian.harmon@mail.wvu.edu.

REGULATION — AND CONTRACT — IN ENVIRONMENTAL LAW

RICHARD A. EPSTEIN*

I.	INTRODUCTION	859
II.	CATASTROPHES	860
III.	THE NUISANCE PARADIGM: THE LOVE/HATE RELATIONSHIP TO THE PHYSICAL INVASION TEST	862
IV.	THE STATE OF NATURE AND THE SINGLE OWNER	864
	A. <i>A Veil of Ignorance</i>	864
	B. <i>The Single Owner</i>	865
	C. <i>The Single Owner Goes Public</i>	867
V.	PRIVATE CONTROL OF NUISANCE.....	870
	A. <i>Negligence and Strict Liability</i>	870
	B. <i>Damages or Injunctions</i>	871
VI.	FROM PRIVATE NUISANCE TO ENVIRONMENTAL PROTECTION	873
	A. <i>Strip Mining and Original Contours</i>	873
	B. <i>Air Pollution</i>	875
	C. <i>Liability and Joint Causation</i>	876
	D. <i>Choice of Remedy</i>	878
VII.	THE ROLE OF CONTRACT IN ENVIRONMENTAL CASES..	879
	A. <i>Easement to Cause Pollution</i>	879
	B. <i>Nonindemnification</i>	880
	C. <i>The Bubble</i>	881
VIII.	CONCLUSION: REGULATION AND CONTRACT IN TANDEM	882
	QUESTIONS FROM AUDIENCE	882

I. INTRODUCTION

I am deeply honored to be the first person invited to deliver the Frank R. Lyon memorial lecture. I think it is very fitting to honor

* James Parker Hall Distinguished Service Professor of Law, University of Chicago. This article was presented as the Frank R. Lyon Memorial Lecture at the West Virginia University College of Law in October, 1990.

a man who has had such a distinguished career in the service for his firm, his state, and, yes, his country.

The subject I am going to talk about today is one of intimate concern to all of us. In speaking about the environment, you are talking about a boom industry. When I graduated from the Yale Law School in 1968 you could not find a subject called environmental law anywhere in the curriculum. Quite the opposite, you had a few old standard nuisance cases and the odd statute here and there that dealt with matters which today would go under the general environmental umbrella. There was no systematic or comprehensive overview of the subject. That overarching perspective became visible with Earth Day in 1970. Since then there has been a bewildering array of legislation that has been passed on all subjects relating to the environment, and it would be impossible to sort them all out in a single lecture, in a systematic or even semi-responsible fashion.

One just has to list the kinds of topics that are relevant to the discussion to gain some sense of the breadth of the issues that you are facing. If you can breath it, you worry about air pollution. If you can drink it, you worry about water pollution. If you can stand on it, you worry about whether it is a wetland. If you can develop it, you worry about whether or not the trees should be chopped down. If you can hunt it, you worry about whether or not it is an endangered species. The list goes on and on and on. In effect, the area of environmental law today is so complicated, so exhaustive, that it can consume the lifetime of anybody attempting to master it. Since I do not wish to preempt the second Frank Lyon lecturer, what I am going to do is to provide something of a general overview of the subject — how I think it ought to be approached — which can then be illustrated by a few useful examples.

II. CATASTROPHES

Now the first question about the environment, I suppose, is why you are concerned about it at all; and there is a very simple answer, which I think that nobody in his right mind would care to dispute. That simple answer is this. If you mismanage the environment, it could lead to catastrophe, and catastrophe could lead to extinction.

No matter how strong a devotee you are of the free market — and I'm a pretty strong one — if you talk first about contract and second about regulation in environmental law, then you have got the order backwards. In terms of relevant significance, you have to talk about regulation first and contracts second. If no one can breathe or eat, then markets too will quickly die of asphyxiation. The only way, therefore, to avoid the catastrophe is to recognize that a system of unrestrained externalities, unrestrained pollution, and unrestrained destruction is going to lead to that unacceptable outcome; so you try to pull yourself back from the abyss.

The sentiments thus far are not especially modern. One can go far back into the common law and find that whenever you dealt with a case of *necessity*, be it public or private, the common lawyers themselves were prepared to suspend the operation of the normal property rights, including the absolute right to exclude others from your own land, and, indeed (as with the military draft), from the exclusive control over your own body. The potential catastrophe that we are talking about here is far greater in magnitude and importance than those that come with a sudden storm that may strand an isolated ship at sea. The catastrophe case thus gives you a powerful foot in the door. It says, no, the environment is not something that you can just leave alone; the environment is not something that can survive the uncoordinated actions of separate individuals, all of whom are actuated by their own self-interest.

There is another side as well, for the major difficulty with catastrophic reasoning is that it tends to push you very sharply to extremes. If you start to think of every particular environmental question as asking whether or not life will continue to survive on planet earth, then you will be driven to some very dramatic solutions. These solutions, in turn, may have some very odd or unanticipated effects and you may, for lack of a more careful technical analysis, do more harm than good. To be sure, environmental protection must be on the public agenda no matter how "free market" your orientation. But once it is there, you must develop the techniques that allow you to rein in some of your imperialistic impulses. Notwithstanding, and perhaps because the issue of catastrophe lurks in the background, environmental protection, like all other difficult

problems, has to be approached incrementally and marginally: how is it that at certain points you may be doing good, while at other points you may be doing harm. Accordingly the debate, in many cases, is not going to be over the moral issue of human survival; it is going to be over technical issues that stress the relationship between the means that you should choose to reach a set of desirable ends.

So, given one plea for extremism and a second for moderation, what kinds of information can you start to look for in order to fashion a modern environmental policy? It is a tall order, for the principles developed should be sufficiently broad and comprehensive to allow you to cover the air, the land, and the water in sensible ways that respect the similarities and differences in various contexts. I don't think you can get all the way there on general principles alone, but let me give you at least a few hints as to how you might proceed. At bottom you only have two sources to look to. You could look to history on the one hand or you could look to analysis, logic, economics, or decision theory on the other. Here, of course, there is always the risk that the history will point to one direction, and the analysis will point in the other direction. In the end you hope that, through a judicious analysis of the whole situation, you could develop a logical framework to make sense of the history and to give you some guidance to the way in which you ought to proceed in the future. It is always nice to have things both ways.

III. THE NUISANCE PARADIGM: THE LOVE HATE RELATIONSHIP TO THE PHYSICAL INVASION TEST

When you go back to the early history of environmental law, the one substantive area that you would want to turn to more than any other would be the common law of nuisance. Now the common law of nuisance is no new-fangled invention. It certainly existed in medieval times by the year 1200 A.D. or so and probably even earlier than that. It has continued to develop in very complicated forms through the rise of the industrial revolution and into modern times. It's an area of law that did not develop through systematic centralized state control; rather, it developed in the usual hit or miss fashion of common law adjudication. But nuisance was the sort of

issue where the judges had enough passes at the problem so that if they got its principles fundamentally wrong, chances were, somewhere further down the road, the built-in mechanisms of judicial self-correction could take hold. The persistence of the common-law rules is a pretty strong indication that the legal system has long been on the right track.

From this law of nuisance, you will quickly discover the common law's love/hate relationship with the so-called "physical invasion" test. A nuisance situation typically arises from a nontrespassory invasion of somebody else's land. Nuisance law should conjure up images about flows, about pollution, about smells, gasses and fumes, and about all sorts of other things that could percolate and migrate across boundary lines without the person who created the nuisance actually having to enter the land of his neighbor. The major intellectual task of the common law was to develop a set of rules that delineated the rights and remedies for this class of nuisance.

Under the common law of nuisance the love of the physical invasion test was stronger than the hate relationship, although the correspondence between invasion and liability was not absolute or perfect. To be sure, you could find a wide variety of situations in which people were prepared to say there was a substantial physical invasion nuisance; therefore, judgment for the plaintiff, no complications allowed. But then when you turned to nuisances that were smaller, there was an elaborate body of doctrine developed under the guise of the "live and let live rule" which turned the presumption on its head and commanded the judges to ignore small nuisances. So some nuisances were not actionable. Then just to make things much more complicated, there was a class of what they called "non-invasive nuisances," or situations where you could damage somebody else's land without any physical invasion at all. The lateral support cases are perhaps the most prominent. The basic question at common law was, why do you always treat physical damage as the legal touchstone without endowing it with conclusive effect both ways? Why not a rule that said if you invaded, there was liability; if you didn't invade, no liability.

In order to understand and justify this apparent failure of nerve, you have to develop an analytical framework that sorts through the ins and outs of nuisance law. Thereafter, you can ask how this

approach will carry over to the more complex schemes of public regulation of direct concern throughout the United States and especially in West Virginia today.

IV. THE STATE OF NATURE AND THE SINGLE OWNER

So, what I want to do is to take you through a mental exercise in several parts. First I want to ask about how to think of the nuisance law in principle; second, I want to ask how you apply that body of law to the traditional private law cases; and third, having done that, I want to give you a couple of illustrations drawn from the public side of the line about how to use common law understandings and insights about small cases to approach some of the major problems in land, air, or water cases posing fundamental environmental issues. I will take a smattering of examples from a wide range of statutes so as to show, I hope, that my approach is not bound in any narrow or concrete sense to one environmental setting.

A. *A Veil of Ignorance*

Let us begin by going back to basic theory. I have to make an unforgivable pun, and insist that basic theory requires a journey back to the state of nature. In one sense, you might say that means you are going back to the environment before man came here; but I use the phrase in a somewhat different sense. I use it in the political-theory sense of going back to a situation before there was any law or organized society. During your sojourn you are trying to figure out the terms of trade — broadly construed to cover all forms of social interaction — amongst various individuals, which would allow you to understand how they would come together and cohere as part of a single, large social organization.

This, of course, is an exceedingly ambitious task and let me here suggest one approach to do it, one associated with the ideas of John Rawls, as set out in his classic work, *A Theory of Justice*. What this approach does is to put people behind a veil of ignorance so they do not know whether they are going to be a good guy or a bad guy in some future uncertain world. They don't understand what their future roles are going to be, and, subject to that constraint of

personal ignorance, they must figure out the set of rules that they'd like to live under before they can learn their own social roles. The point of this approach is to make people honest about the direction and intensity of their preferences over different states of the world. If you don't know whether you are going to be a future victim or a future injurer, the only way that you can protect yourself as a self-interested person is to do service by the society at large. So the veil of ignorance is a necessary philosophical ploy to trap people into making honest judgments about their own desires in ways that could be generalized to handle various problems with respect to legal rules.

B. The Single Owner

Now, how can this lofty conception derived from political theory apply to our particular problem of the state of nature in environmental law. Here there is a narrower way to look at the problem which makes the issue a little bit less daunting and a little bit more manageable. That method is this: *assume that you reap all the gains and bear all of the losses associated with a particular project, just as if you were a single owner of all relevant resources: as a single owner what would you do given that all relevant resources are under your command?* The point of this question is to create a situation in which all the gains and losses that flow from certain kinds of actions are going to be "perfectly internalized." So that the difference between a single ownership situation, for example, and a liability situation is as follows: If it turns out that Epstein, while running to make it to this lecture, stubs his own toe and hurts his own foot, that's a situation in which he is, as it were, the wrongdoer, *and* the victim as well. But it is rather improbable to think of any way in which he could possibly sue himself: the best the law could do is to take money from one pocket and put it into the other.

With water pollution and other environmental conflicts, the same approach is applicable: ask a single individual to decide what he would do under certain circumstances where, for example, the pollution that he creates by operating his own factory happens to damage his own land, so that he will get the gains and losses associated with the pollution. Setting up the problem this way makes him re-

alize that there is no way he can make any one else bear any of the adverse consequences of his own actions. But stating the problem in this fashion commits you to undertaking delicate theoretical thought experiments that presuppose we can detect enough underlying regularity in the way people think in order to achieve some intellectual consensus on the outcome.

Now, let's see if we can run one of these experiments. Start with an easy case. Suppose you could run your factory more cleanly at a relatively low cost, whereas if you pollute your own wells, you will die of thirst because you have no alternative water source. At that particular point, it is pretty clear, I think, that you can say that the savings that you obtain from running this factory at lower cost are going to be dwarfed by the losses that you will suffer from the absence of a safe water supply. Accordingly, you will alter, and probably rather rapidly, the way you produce goods in order to keep the water available for your own survival. It is possible to go a bit further and to state as a general rule, but not a universal rule — and the qualification will become critical as the argument advances — that nuisances cost the single owner more than they are worth. Accordingly, people in the regulation of their own affairs generally seek to avoid creating nuisances. But there are at least two critical exceptions to the basic rule.

First, there may be certain emergency situations where certain forms of production are absolutely necessary even though they generate relatively large losses, so that on balance it is still wise for the single owner to continue with the activity. People normally do not think that the amputation of a limb is a good thing, but if the alternative is death through gangrene, then the loss will be reluctantly borne.

Second, and more importantly for the general structure of nuisance law, I think most people could identify a huge number of situations where as single owners they create some small nuisance, but are nonetheless quite prepared to live with its consequences. So this morning when I got up, I thought about using an electric shaver or a hair dryer; these things make noise. The noise happens to bother me, but on balance, a clean beard and a well washed head of hair seems to be worth the associated inconvenience. When you go in the kitchen and you start cooking, fumes come out from the frying

pan. Generally, you would rather eat with fumes than starve, so as a single owner you put up with the admitted inconvenience.

By the time you have finished these and similar thought experiments, the following general pattern starts to emerge, even for the single owner. Where nuisances are substantial, the cost will usually outweigh their benefits. Where nuisances are slight, their benefits may well outweigh their costs.

C. *The Single Owner Goes Public*

Now having stated the basic relationship, the next question is how to "go public" with this intuition. In other words what happens to the analysis when we cease to speak of single owners and address conflicts between different owners. What happens when one person creates the pollution and a second person suffers the harmful consequences? My general proposition is this: *when cause and consequence are no longer both lodged in "A", but are instead broken up between "A and B," then, generally speaking, the optimal allocation of resources would be whatever a single owner chose as his optimal allocation.* The patterns of resource used for the single owner should therefore be duplicated as best as possible after the resources are divided among different owners. Accordingly, if you knew that the pre-existing pattern of pollution was "X" and the associated pre-existing pattern of production was "Y" then you would like to keep that overall pattern intact notwithstanding the radical separation of benefit and burden wrought by divided ownership. Unfortunately, the ability to work out this translation from one person to many people is exceedingly difficult. That is why a liability rule is a lot more difficult to operate than the automatic system of self-enforcement that necessarily emerges in single ownership settings. Let me mention to you some of the problems that arise.

First of all, when the analysis extends to separate people, the problem of valuation becomes much more pressing than it was with a single owner. It may turn out that some people are sensitive to noise and other people are not. Some people would resolve this single ownership accommodation in one way; others would resolve it in another. No person is the single owner. Therefore, you are always

worried when going across individuals whether the separation of the defendant from a plaintiff necessarily changes the values on both sides of the equation. This, of course, is exceedingly troublesome in practice, because once you allow people to come into court to announce that they are exceedingly sensitive, then all sorts of people are willing to posture in order to take advantage of a legal rule, knowing that others will find it very difficult to verify whether or not they're giving you an accurate statement of their own preferences. In contrast, it's very hard for you to deceive yourself. The move from a single ownership to split ownership gives rise to both valuation and verification problems that did not previously exist.

Second, you also have to worry about changes in the incentive structure for the two actors in the split-ownership situation. If I know that when I do something stupid, I will have to pay the price, then there is an inexorable and instantaneous feedback mechanism that says "Go easy, Epstein, you're out to poison your own well." But if I'm poisoning somebody else's well, my temptation to go easy is correspondingly diminished because I can keep both my manufacturing output on the one hand and drink my clean water on the other, now that the pollution takes place downstream. The risk brought on by split ownership is that an individual actor will take into account only *part* of the costs but *all* of the benefits of that action. The necessary implication that standard economic theory draws from this situation is that you will have both too much pollution and too much manufacture. The total size of the pie could be increased if both pollution and manufacture were reduced to a lower level.

Unfortunately, however, there is no automatic mechanism for self-correction as there was in the single-ownership situation, where you did not have to sue yourself in order to change your behavior. The moment you have two or more actors, it's very costly to bring the lawsuit necessary to move the incentives back into proper alignment. Reaching the ideal single ownership pattern becomes a more difficult task than one might ordinarily expect. But only if you have some sense of how this transition from one to two persons takes place can you hope to attack the far more difficult question of comprehensive environmental regulation.

Let me just give you a couple of illustrations of how the transition from single to split ownership may be done, examples that track the thought experiments I alluded to above. The first one is the old "live and let live" rule which was announced by Baron Bramwell a long time ago in 1863 in *Bamford v. Turnley*.¹ He probably didn't make the rule up out of whole cloth, but followed earlier common-law practice on the same subject. Bramwell said that if there are low level *reciprocal* interferences from which each of two people both benefit and suffer, then the law just forgets about liability on both sides of the line.

There are no damage actions; there are no injunctions. This principle, while initially applicable to two persons, easily generalizes to '*n*' persons. Bramwell's instinct is absolutely sound. What he is saying is, whether you look to two parties or to *n*, you are pretty confident that the benefits to the doer of any act in this class are greater than the losses suffered by others. The social calculus for that act has benefit in excess of cost, which is positive, and therefore attractive. If you multiply that outcome from a single case by a thousand or a million, all you do is to increase the overall gains from this well-defined and limited class of activities. You might be troubled about the distributional consequences if you looked at the gains and losses of a single act in isolation. There is always uneasiness where A gains and B loses, even if A's gain is greater than B's loss. But given that these acts are by assumption reciprocal, the problem is effectively countered. Each person is the winner from a sufficient subset of the total universe of transactions that there is no long-term loser from the change in the institutional practice — or in the highly unlikely case that there is, no one can identify who that person is before the fact.

There are, therefore, no allocative or distributional mistakes from the rule. And the same is true on administration, because a rule that cancels out huge numbers of small potential lawsuits at a single stroke surely imposes no undue administrative burdens on the legal system. Since no one can claim special exemptions, there is no risk

that people will pretend that they suffer great harm from trivial acts. So the live-and-let-live rule forms an extraordinarily durable exception to the general rule that all invasions are going to be actionable. How can you top sound incentives and fair distribution of gains and losses at virtually zero administrative costs? One of the reasons why this rule has never been challenged in the private context is that all land owners, thinking of the rule in a systematic way, realize that any short term inconvenience is overwhelmed by long-term personal gain. So being the veil of ignorance, the live-and-let-live rule works very well indeed.

V. PRIVATE CONTROL OF NUISANCE

When you move to larger kinds of nuisances, however, the balance of our convenience usually runs in the opposite direction. If in general, you assume that the cost of any major individual pollution accident or incident is going to be greater than its benefits, and if you simply multiply it by "*n*" you are only increasing the kinds of losses generated through repetition. There is an old joke in the garment industry that says if you lose money on each individual piece, you don't make up the losses by an increase in volume. That logic applies to a "*T*" here. Start with a negative number, and you get only a larger negative number whether you run the same transaction five or a million times over. Under these circumstances, a live-and-let-live rule starts to give way to legal control of nuisances.

A. *Negligence and Strict Liability*

What form does that legal enforcement take? Most of us are familiar with the endless debate over the choice between negligence and strict liability; predictably, it reasserts itself within the nuisance context in its familiar form. Why then is the general debate so difficult? Start with the assumption that the legal system actually knew what it was doing (a very large assumption) and could get accurate information about the levels of precaution (a very controversial assumption), and accurate information about the expected frequency and severity of risk. Under these strict assumptions, the one thing you could say categorically is that it wouldn't make a difference which particular rule of liability you adopted. You could show by

all sorts of formal mathematical proofs that under both systems everybody will take exactly the ideal level of precautions, and that over the long haul the wealth effects across individuals would wash themselves out, so that everybody will be exactly as rich or poor under the one rule or the other.

So one of the reasons why negligence and strict liability debate is inaccessible to those without legal education is that in the larger social cosmic sense it probably does not matter that much. But when you introduce routine frictions — of knowledge, bias, and administration — then the debate becomes very important. The fundamental task is to economize on administrative costs without distorting the underlying incentives to avoid harm. On balance, the common-law preference for strict liability for large nuisances will provide the right rule precisely because it obviates the need for all these borderline interpretations as to exactly what ought to take place, and thus simplifies the cost of litigation.

There is an important follow-up problem in dealing with nuisance and pollution cases: what should be done when a case involves many individuals who may engage in pollution and many people who turn out to suffer from it, with only imperfect overlap between the two classes? In the end, this problem drives you away from the whole idea of a private-law solution, now that the transaction costs overwhelm everything else. One common-law intuition that does not easily carry over from small to big cases is that which holds one person responsible for all the injury caused by the joint tortfeasors. That rule may work perfectly well where you have two or three defendants, but with situations where a thousand people contribute to air pollution, holding a single driver in Los Angeles responsible for all the smog created in the city is not a sensible way in which to proceed, even by a thoughtless extension of ordinary common-law rules developed in quite different settings. It is necessary to back off the joint causation rules to find some principle of proration that applies to the larger class, without engaging in the fancy fine tuning that is capable of bringing down any legal system.

B. Damages and Injunctions

Now the last pressing question for the common-law system is this: what is the choice of remedies for the wrongs that have oc-
Disseminated by the Federal Reserve Bank of Dallas, 1991 43

curred? Stated in its pristine form, the classic dilemma is the choice between a damage remedy, which compensates the victim for the losses suffered, or an injunction, which by-passes the compensation question by stopping the pollution to begin with. In practice it is very difficult to figure out which of these two remedies is to be preferred because neither of them offers the fine tuning available when a single owner both suffers the loss and internalizes all the gain. More concretely, should the common law balance two competing forms of social inconvenience by choosing the remedy appropriate for the case.

First, if damages are the remedy of choice, then there is a risk that large and powerful institutions will run over small landowners and wipe them out, only to drop a pittance on the table and claim that they have tendered full compensation. But the compensation tendered is likely to undervalue the loss, and perhaps miss some personal intangibles altogether. On the other hand, if injunctions are issued as a matter of course, then a single fellow who owns land worth a hundred dollars could stop the development of a multi-million dollar plant by the same chemical company, even if that plant brings enormous benefits to everybody within the community.

How do you decide which form of bargaining is going to be more fatal? Is it damage levels, or the holdups that follow from injunctive relief? The common-law rule made a pretty sensible accommodation. Where property had relatively minute value, your actual damages formed the accepted norm. The small price was paid by the large project which was allowed to go forward. Perhaps this remedy was inadequate because it gave no portion of the gain to the innocent party, but that problem could be solved by requiring a multiple of actual damages, especially in low-level nuisance cases. In contrast, with major losses, the court would issue the injunction and require the buy out on the ground that the defendant's conduct posed too much danger of overreaching, too much of a risk of causing harm without providing compensation, given the difficulties of valuation and the risk of possible insolvency.

There is one additional feature of the common-law rules that should be mentioned. Earlier, I noted that the general presumption was that large nuisances caused more harm than they were worth.¹⁴

But that presumption was only a presumption, and one question that arises is, what mechanism of correction should be used when that original judgment turns out to be incorrect? The distinctions taken above gives a pretty good first cut to the inquiry. Where the value of the property damaged is large, then there is some reason to believe that this initial presumption holds. The injunctive remedy therefore says that the mode of correction is, let the creator of the nuisance buy out the victim. But where the level of the harm is small, and damages are provided, then the presumption is that the victim should buy out the polluter if, as seems likely, the values sacrificed are really greater than the damage awards that are tendered. In both cases the idea is to give that remedy — damage or injunction — which minimizes the need for the subsequent buyout, while allowing the buyout to take place where it is desired. The rough-and-ready-common-law distinctions appear to do that job as well as any other imperfect remedy.

VI. FROM PRIVATE NUISANCE TO ENVIRONMENTAL PROTECTION

Taken as a whole, then, I think the body of common-law nuisance rules (and there are others not mentioned here) are on balance pretty sound. How are these rules to be transferred into the public sphere? I think in many cases we lose sight of some of the really clever accommodations available at common law and tend to adopt a set of rules that imposes major cost without correlative benefits.

A. *Strip Mining and Original Contours*

Let's return to our single owner in order to consider a statute that I think is fairly important to West Virginia. It has been litigated to the United States Supreme Court, which reached, I believe, the wrong result. The questions at issue in *Hodel v. Virginia Surface Mining and Reclamation Ass'n*² asked whether a coal operator that operated a strip mine was obligated, at its own expense, to restore the land to its original contour, as it was required to do under statute. The answer to this question, under the circumstances con-

sidered by the Court, should have been no. Initially, it looks as though this involves a classic single-owner situation. As a first approximation, the landowner who takes out the coal and the landowner who suffers the inconvenience is the same person. As a first cut, it is difficult to see who else has been adversely affected by the statute.

But you will say as a first response that in many of these cases the mine can leach if it is left open, which is surely a serious concern. There is, however, no positive connection between leaching on the one hand and a restoration to the original contour on the other, and there may be an inverse correlation. The costly effort to restore land to the original contour, especially where grades are steep, could increase the amount of leaching and physical damage to neighboring lands. The theory here is that the greater the disturbance of the soil, the more likely that some adverse unforeseen consequence will take place. So, if these physical effects are put to one side, it looks as though regulation ought not to be allowed because there is no nuisance to prevent.

There is, however, a second round to the argument. The external effects are not only physical; some of them are aesthetic as well. How then are these to be factored into the equation? The correct approach, I believe, requires us to make a hypothetical calculation. Assume that the outsiders owned *both* the neighboring lands and the land from which the coal was extracted. What course of action would they take as single owners to balance both the aesthetic and the productive uses of the land? I doubt very much that they would decide not to develop the coal at all, for now the income forgone from its production is their own. I also doubt that they would choose to leave the land in its scarred condition after the coal had been exhausted. But by the same token, I don't think that they would spend their money to return that land to its original contour if they had to bear the physical damage and economic cost of the restoration.

The argument thus far is hypothetical in structure and necessarily couched in probabilistic terms. On balance I think that I have identified the right scenario. The possibility of mistake cannot be dismissed out of hand. But if the initial stage of the process is mistaken, there is still a second process that allows for the necessary corrections

to be made, similar to the buyouts of injunctions or damage awards allowed with private nuisances. If the state (or the dominant political faction) really thinks that there is some distinct benefit to restoring land to its original contour, then it should condemn the property for market value and, at its own expense, restore the land to the original contour. Alternatively, they could pay for the amount needed to restore the land to the original contour above and beyond any expenditures necessary to prevent physical damage to other property, either public or private.

Summing up, then, the right accommodation as a matter of environmental policy is to require restoration of land to a safe state, at the owner's expense, so that you don't have any common-law nuisance after the strip mining is finished. But if there is only an aesthetic concern about returning the land to a state that existed prior to the mining, that cost should be on the public budget not on the private one. There will be excessive willingness to require a return of land to its original condition if the people who benefit from that decision do not shoulder its costs. The point here, moreover, is not one about relative wealth. Thus, even if the state treasury were filled to overflowing, I doubt that any legislature would choose to expend its resources on the changes that it is willing to coerce through its police power. A tax refund would be preferable. Similarly if the state owned both the mines and the surrounding lands, I also doubt that it would spend its money to restore the land to the original contour. The wrong outcome, as measured by the single owner test, is therefore far more likely to occur under a rule that allows the state to force this restoration without having to pick up the tab.

B. Air Pollution

Turning to air pollution, there is a close public analogue to the "live and let live" rule. That is the problem of what is to be done with low level pollution. If somebody comes forward to you and claims that the optimal amount of air pollution in any part of the United States is zero, then you know that he has taken the wrong approach with respect to environmental problems. This is no more sensible than saying the optimal amount of noise in your bathroom

in the morning when you are preparing for the day should be zero. Virtually everybody is willing to suffer a little bit of pollution in order to get a great deal of convenience. The appropriate strategy, therefore, is to lower the total level of pollution so that the amenities of life are preserved, but not so low as to destroy industrial development. Just as there are diminishing returns with individual precautions against accidents, so too at the collective level there are also diminishing rates of return to environmental protection.

Generally speaking, moving from locale to locale, it is far from clear that these minimum limits will be identical. Yet it is certainly clear that whatever they are, these limits won't be zero, given the natural divergence of taste and the fact that the overall levels of allowable pollution are likely to be a little bit higher than some of us would prefer, or could even tolerate. In dealing with aggregate phenomenon, however, selecting the optimal level is exceedingly difficult. Sooner or later in the analysis, "live and let live" becomes the dominant rule, even though it cannot and should not excuse wholesale pollution that creates a serious danger to life and health. In evaluating the recent air pollution legislation passed by Congress, getting good estimates of the amount of environmental damage attributable, for example, to acid rain or the number of increased cancers is absolutely critical. This is especially true if the government relies on the "worst case" estimations that are so popular in some quarters. These expenditures are not only a waste of money, they also divert needed funds from environmental projects, which, while identified later on, nonetheless deserve a higher environmental priority. It makes no sense to spend a fortune stopping the production of acid rain if most of its adverse effects on lakes and streams can be neutralized, cheaply and effectively, by deposits of limestone. The demand for perfection in one sphere is the guarantee of excessive environmental losses in other spheres.

C. Liability and Joint Causation

The third issue for which the private law of nuisance offers some guidance involves the relation between two questions: the choice between strict liability and negligence on the one hand and the pro-

ration issues on the other. The statute that best illustrates that interaction is the Superfund statute.³ There are basically three dominant issues of liability under Superfund. The statute, and the cases interpreting it, have got one right (the one that doesn't matter) and two wrong (the ones that are really critical). Matter number one concerns the choice between strict liability or negligence as the threshold condition for liability. On balance, the right choice is the strict rule, because of the convenience of having a rule that allows you to know who is responsible when there is a potentially large number of polluters.

On the question of joint causation, however, Superfund has rules that are gratuitously severe. To hold anybody who contributes the slightest amount of waste to a given dump site legally responsible for all the pollution that takes place in that area only multiplies the number of parties beyond the level to which the legal system could sensibly respond. Litigation under Superfund make Dickens' *Bleak House* look like a minor legal skirmish. The joint and several liability rules under Superfund also create weird and unpalatable incentives. If you cause a few thousand dollars worth of damage, then you are going to be subject to millions of dollars in potential liability. Under the law as now structured, it is smarter for a bad polluter to continue to pollute a place than for a cleaner firm to take its place, given that the reward of the second firm is liability for all the harm that preceded it. When we treat improvers as though they were destroyers, they will not come at all. This mistake in legal rules is not without consequence. As lawsuits drag on, nobody is able to find a way to clean up the dump sites, which is the ostensible object of the legislation to begin with.

The problem of poor incentives is only compounded by the imposition of retroactive liability for pollution under Superfund. There are no positive incentive effects on the previous owners, and if anything a dulling of incentives on the part of persons still in position to prevent the harm. The costs of investigation and administration increase as well, so there is little positive return from the effort. There are times when the tort system is too cumbersome to invoke.

3. Comprehensive Environmental Response, Compensation, and Liability Act of 1980, Pub. L. No. 96-510, 94 Stat. 2767 (1980).
 Diss. Nat'l. Inst. Environ. Health Res., Rep. No. 2767 (1980).

It is far better to impose a form of a general revenue tax in order to fund the clean-up campaigns that may be necessary. There is no reason why the environmental situation should be allowed to deteriorate while endless legal battles go on over the division of legal responsibility.

D. Choice of Remedy

My last topic, the choice of remedy for environmental harm, can also be exceedingly important. Let me mention to you a case that I worked on very briefly a few months ago to illustrate the basic problem. Suppose you owned a chemical company that makes chemicals for farmers. Some small quantities leach into the ground, from which they slowly migrate into the water supply where, in minute quantities, they are discovered by the reservoir owner — the local municipality. What ought to be done?

In this context the knee-jerk response is too often this: The municipality says, the party who is responsible for the pollution has to pay in order to clean it up. Direct suits against the many farmers that used the product are difficult to organize, and local governments are often reluctant to sue their own voters. The legal action is then carried back to the original manufacturer of the chemical, which had no control over the way in which it was used in the feed. Let us assume that one can overcome various legal defenses on the question of manufacturer liability, and ask whether the manufacturer should pay for a clean up, which could cost millions of dollars to remove the small quantities of toxins that are discovered in the reservoir?

It seems to me that the simplest way to approach the problem is as follows: Ask the question of what would the state do if the pollution had been generated by a natural source. If under those circumstances you (as the single public owner) are not prepared to remove the toxins with public funds, then, generally speaking, you ought not force the private defendant to clean it up either. The proper remedy under these circumstances is damages for the diminution in the value of the quality of the water, taking into account

the risk of personal exposure to the toxin and the diseases and complications that it may cause. The difference between the two damage remedies could well amount to millions of dollars for a single site, because it is very expensive to reduce to zero concentrations that are measured, at most, in parts per billion. It is not worth undertaking that remedy, no matter who pays for it, if the anticipated savings are likely to be the reduction of a single case of cancer twenty years down the road. The single owner test directs you to the right remedy in cases of this sort. But the alternative test, which requires the polluter or other wrongdoer to return to the *status quo ante*, leads to systematically excessive expenditures on certain environmental issues, expenditures that only divert funds from where they are more critically needed.

VII. THE ROLE OF CONTRACT IN ENVIRONMENTAL CASES

Now let me just talk briefly about the role of contract in environmental situations in order to round out the basic picture. While most of environmental law is concerned with how and when to coerce persons not to do bad, some portion of it has to do with how you induce people to do good. Contract is, therefore, when you start to think about the system, enormously important in the assessment of the overall operation of the system.

A. *Easement to Cause Pollution*

At the outset of this talk, I stressed the importance of making estimations of whether a single owner attaches greater value to the harm or the gain of certain courses of action. The best that you can do, in the abstract, is to make general statements about the relative likelihood. While, in general, extensive pollution may not be worth what it costs, there may be some cases in which the large pollution in fact is justified by the enormous gain that it creates. When you have a legal rule that says that you are always responsible in tort for substantial nuisances created by your neighbors, you are not making the rule which applies generally, you are making a rule that applies universally. It is also a rule that will not fit the facts in some cases. So one of the major functions of a system of contract law is to correct the outcome in those cases that fall outside the normal parameters—those cases which are not typical of the underlying problem.

Suppose there is a project that generates enormous gains from a single site, even though it imposes extensive losses on a neighbor. If the gains exceed the losses (and there are no external effects), then if the two sides want to make an exchange, whereby one side surrenders an easement to pollute in exchange for cash compensation, then the law should allow, indeed encourage, this arrangement. Modern environmental policy too often treats these side contracts as some form of corrupt transaction, some form of selling out. But that orientation is a mistake. By and large, you are going to have to tolerate some pollution somewhere. If there is a market transaction that ratifies the pollution, you now have some information as to what the extent of the harm is really going to be, relative to the gain. It is necessary to be careful, of course, because an easement from A to cause pollution on A's property, doesn't give you an easement to cause pollution on B's property. But there are lots of cases where that side constraint does not bite. Generally speaking, contracts to cause damage by pollution or otherwise ought to be allowed.

B. Nonindemnification

A second situation in which contracting is exceedingly important but frequently barred, is between persons in the same chain of waste disposal. Superfund again affords an illustration. There for example, if you own a dump site and you have goods shipped to you by a hauling company, the hauling company is not allowed by contract to exclude itself from liability. Under the statute, every party is going to be held liable in the case and any contract for indemnification between the various defendants will generally be void. There is absolutely no reason whatsoever to void these kinds of contracts. The indemnity waiver is not going to be given up for free. Either there will be cash coming back in the other direction, or more importantly, the indemnity waiver will be coupled with an inspection system so that the party that ships the waste to the dump site will have to make sure it is sealed in the proper containers and so forth. Given the risk of liability, the party that receives the waste at the dump site will make sure that the waste is, in fact, in the condition it's supposed to be. Contracts that keep remote parties out of the lit-

igation simplify the operation of the legal system and provide clean-up incentives to the various parties. As long as the external effects of the arrangements are controlled (as by requiring insurance or bonding of dump sites), there should be no serious problem.

C. *The Bubble*

Now the third and the last case that I want to address goes back to our air pollution example, with its famous "bubble," which is an exceedingly important problem, if not in Morgantown, then certainly in major industrial centers. In Los Angeles a great number of stationary sources emit pollution. There is a collective desire, however reached, to keep the level of pollution in a certain region below a certain amount. Therefore, on balance, the law will allow local factories or plants to emit pollution up to a certain level. The question is whether or not you, who are currently allowed to pollute, may transfer your right to pollute to somebody else, so long as the level of pollution is not thereby increased. If you have a rule that pollution is always a wrong, then you won't allow the transfer. But generally speaking, the transfer should take place under the following circumstances: If you as the buyer of the pollution right can produce more social product by emitting the same amount of pollution, we want you to do it. The single owner would change the mode of production because he would gain unambiguously, and legal rules should induce that same result where collective action is involved. The law, therefore, should allow these trades because the original external constraint — so much pollution and no more within the bubble — can be observed. Yet, by allowing trades within that particular bubble, you can increase the amount of productive manufacture that takes place. Instead of asking the law to mandate efficient technologies, people will voluntarily develop them because they know they can buy up pollution rights and make a profit by their redeployment. (It is also true that the holder of the pollution right could buy up the technology to the same effect, and there is no reason to place restrictions on that form of transaction if it turns out to be more efficient).

Instead of creating incentives for firms within an industry to drag their feet under some command and control system in which the

state orders private firms to do what the best technology says is feasible, the tradable pollution rights within the bubble gives them an incentive to do it all voluntarily.

VIII. CONCLUSION: REGULATION AND CONTRACT IN TANDEM

A final look at the overall situation reveals, I believe, that the most difficult conceptual problem of environmental law can be approached by answering, in sequence, two related questions. The first question is, how do you control external harm? On that issue, some form of government regulation is inevitable. But in structuring the regulation, you have to be extraordinarily careful to make sure that you pick the liability rules, the damage rules and the injunction rules that work well in the situation; rules that seek to duplicate the set of decisions that would be reached if all the relevant costs and benefits were borne by a single owner.

Second, once you have guarded against the external harms, then having a set of rules that allow people to contract amongst one another so that they can increase output without increasing pollution, is an outcome that we ought to encourage, so that within the perimeter of rights set up to respond to the environmental concerns, a series of private contracts should be allowed to do their work. Market solutions thus become possible where the property rights of the legal system have been well defined. Take the two halves and place them together, and the topic is regulation and contract in environmental law. Regulation tells you how far you may proceed against the rest of the world, and the contract tells you how you could increase gains by trade within the basic framework.

The long term effects should be encouraging. If you adhere to the basic strategy, the gains will percolate through the prices and to the rest of the economy. It will no longer be a situation in which one persons's profit can come only at the expense of someone else's loss. Sensible legal policies should allow a consistent improvement of the standard of living for all persons. A few sound principles, faithfully followed, should allow us to advance a long way.

QUESTIONS FROM AUDIENCE

Question 1: I have worked extensively in the area of surface mining, and it seems clear that you have not. Do you think that

the distinctions between aesthetic and other aspects of regulation are justifiable, and why are you so confident that surface mining does not have any adverse physical effects?

Epstein: To start with the second part of the question, my factual information comes from the *Hodel* case, where it was held that the takings challenge was premature because the law that required a return to the original contour had not yet been applied to any particular mining site. The summary judgment issued for the miners below, with which you obviously disagree, reached the conclusion that compliance with the statute would create more physical external harms than noncompliance. That was the posture of the case on appeal before the Supreme Court. Now if those facts are wrong, then I would simply say that the theory would simply require a different result. I am not wedded to the proposition that the failure to restore to original contour produces only aesthetic harm, although I believe it to be likely. I am wedded to the proposition that *if* the only harm that is produced when land is not restored to its original contours is aesthetic, then compensation should be required from the state. On the question of whether the state should spend money for those purposes I am quite deferential, but I do not think that it is likely to happen given that the costs will be borne directly by the public treasury.

Question 2: The aesthetic notion is essentially one of the commonwealth. People don't care to live in disfigured surroundings and it's the same sort of rationale that causes people to say everybody in this community has to paint their houses yellow, everybody has to set back. I mean those are the kinds of zoning land uses that are very commonly made and accepted by courts, and your suggestion that people cannot consider the aesthetics as an externality is bizarre to me.

Epstein: Oh, I don't think it's bizarre. Let me go back to some of the other cases that you talked about. I think it is utterly inappropriate for somebody to come along and to say that you have to paint your house yellow because he doesn't like its present color. But there are cases where zoning restrictions make sense, and here the idea of reciprocity lies at the core. If the restrictions are perfectly reciprocal in their nature, so that if I paint my house yellow and

you paint your house yellow, then we preserve a wonderful historic district. What you are showing is that there is a matching of benefits and burdens that allow the regulation to move every person to a higher level of utility than he had before. That outcome is going to be equivalent to the live and let live rule with respect to non-invasive nuisances. I didn't push the point in the talk, but that is the fair implication of what I said.

Unfortunately, most zoning regulation is not that sort. Most of it allows me to advance myself at your expense through the political process. The use of coalitions is rampant: the owner of one shopping mall gets together with an environmental group in order to stop the development of a second mall: there is a substantial gain to the existing mall owner, but it is dwarfed by the wipeout to his rival, and by the loss of consumers from the diminution of competition. It is to prevent just that kind of unfortunate outcome that the compensation requirement kicks in. To stop the competitive development, you have to pay for it out of the public treasury instead of simply announcing that your preferences are so strong, that your aesthetics sense is so keen, that you can block others from using their property without backing your preferences with dollars.

Question 3: The conceptual framework in the issue of toxic waste disposal when you live in a rural area is that land values are much cheaper than they are in large urban areas. Do you think that it is proper to encourage the removal of toxic wastes to states like West Virginia where the population densities are lower, but in which many people still live?

Epstein: In the talk I did not address the question of jurisdictional conflicts with waste disposal, but only talked about the control of externalities by pollution and nuisance like activities. Now you have shifted focus to say: "Look, I don't think that anybody in West Virginia has done anything wrong, so don't you bring your sludge into my town, and don't make me bear a loss so somebody else can get a gain." You are saying that you should not be treated like a tortfeasor when you haven't done anything wrong. Basically, I think you are right. You cannot use the framework of the previous analysis to handle the movement of waste from one locale to another, and I would never try.

Let me briefly indicate how the problem of disposal might be handled. The first point to remember is that the compensation element is absolutely critical here in order to put the gains and losses into proper alignment. So let's just take a simple kind of issue. Suppose we treat Chicago as a big city with a waste problem which is going to cost a billion dollars to resolve. Chicago comes to West Virginia and can show that it will reduce the land values by only two hundred million dollars if the Chicago sludge is dumped here. There is now the possibility of an interstate trade which takes this form: if the Chicagoans not only bring their sludge but anything above two hundred million of their own dollars to West Virginia, it can compensate local West Virginia landowners in cold cash, so that the value of their total holdings — land reduced by the pollution but augmented by the cash — will be greater than it was before. Similarly, the value to Chicago of its land holdings minus its cash and minus its pollution will be greater than the value of its land with the waste and with the cash. The reason for insisting on just compensation is to avoid the unfortunate political dynamic where the big guys always win and the little guys always lose because all that is done in decisionmaking is to compare relative magnitudes of gain and loss, *without* making appropriate financial side payments and adjustments.

I believe that the valuation of gains and losses has to be made, and that it cannot be done on the cheap, where the losses suffered are narrowly defined or artificially constrained. The standard, if regrettable, modern American practice on eminent domain holds when you are dealing with takings, but courts don't take into account psychic losses and subjective values. That's wrong. These elements of losses need to be taken into account. If the change in the market value of West Virginia is 200 million dollars, chances are that 201 million dollars in payments won't satisfy the just compensation requirement. It is necessary to boost that number up. How much? I can't say but probably up to three hundred, four hundred, or five hundred million dollars before it becomes a fair trade.

Now that these issues are recognized, there are some ominous implications for other issues. Waste disposal is not distinguishable in any shape or form from the wetlands question. Where the state

wants to preserve the wetlands in order to preserve some rare fish, most people don't particularly care that their regulation has taken lands and reduced their value by ninety percent, in part for the benefit of the same people in Chicago. Same villains. Right? If the state wants to regulate it, let it buy out the development rights and then convert the property in that direction. So what I would stress again is that in nonpolluting cases, the general rule ought to be that if you wish to conscript somebody's land either as a conservation or preservation site, or as a waste disposal site, you have to buy the privilege.

And you know what will happen? As the price goes up, even on this issue, the demand for all of these various services will go down. It's not as though the people in Chicago will want to dump as much pollution into West Virginia as they did before if they have to pay a high price for it. They will start to think about how they can economize on waste and on disposal back home in order to avoid these costs. Turning again to wetlands, you won't get the situation where the ecological buffs amongst us will say that a drop of rain or the presence of a single plant will make some lands wetlands, even if they are two hundred feet above sea level. They will start to economize on what lands they want to choose to preserve for these purposes. What is desperately needed, therefore, is a strong system of compensation to make sure that you have a well-functioning market. You should not assume that my position, when it comes to nonpollution, is a willingness to command and control regulation or strict government fiat.

Question 4: The issue is not whether the person who owns the land is going to receive the actual compensation, the issue is whether the other residents of the state have a right to regulate what that person does on that land.

Epstein: That problem raises a somewhat different battle. The problem is whether or not under the commerce clause the federal government gets clear sway over this issue, and for better or for worse, federal jurisdiction prevails today. So that's one point. The second dimension to the problem is more substantive. Let's suppose that all the sludge that you want to move twenty miles north of Morgantown comes from Charleston. Now the issue is one that's

strictly within state and it seems to me that the same argument about just compensation applies. If the disposal is going to be less convenient in Charleston than in Morgantown, then it should be possible, through government action, to force an exchange that benefits both sides. The only issue left to fight about is the amount of the compensation payable; and, as before, a compensation rule takes away a lot of the sting, because otherwise what you will have is just simple coercion in which the folks outside of Morgantown lose; they don't get dime one. They just lose. Oddly enough, the political battles will be much uglier if there is no compensation tendered when burdens are imposed. One of the reasons why you want compensation is to moderate the political struggles that are going to be costly and wasteful and productive of local ill will.

Question 5: Your suggestion that the compensation measure is the appropriate one is presupposing, that you've got some appropriate measure of evaluating what the cost is going to be. I think what's implicit in this gentleman's question from the back was when you are assuming it's two hundred million dollars worth of damages to the immediate community in the short run, there may be uncompensated, uncalculated, long-term ecological and environmental effects and also economical effects on the infrastructure that aren't incorporated into the measure. As you yourself say in the eminent domain case, there's a lot of subjective damages that aren't compensated. In environmental settings, it's the long-term, ecological consequences. Once we get ourselves into damage remedies where its dollars against dollars, isn't there an inherent bias toward under-regulation because you can't quantify the environmental harms? Going still farther, the problem is the question of political will and taxation. And if the political decisionmakers were to keep looking to the populace which underestimates the longer terms consequences and is unwilling to pay the taxes necessary, then the only feasible political way to achieve the efficient level of pollution is to put that burden on the polluters in the particular.

Epstein: But these are not pollution cases; these are solid waste disposal situations.

Question 6: I don't see how you can make that distinction on pollution when the entire problem of solid waste disposal is the

unanticipated problems of pollution as in the Illinois SCA case.⁴

Epstein: Let me see if I can sort the issues out and tell you why I think there's at least some conceptual distinction. The first problem you identified is that you always have to take into account subjective value. There is an enormous risk when you are using a compensation system that these values will be underestimated and ignored and, therefore, you will get skewed political judgment. True enough. There are several answers to that concern and I think they all have to be taken into account.

First, let's suppose you abandon compensation. You still have to figure out how much waste you are going to produce. You are still going to have to figure out where you are going to locate it. You have knocked out the price mechanism, but you still have to figure out both market losses and subjective losses. If you don't use the compensation system, you will not be able to solve the allocation problem. You will simply transfer to another arena and you'll make it worse. Why? Because in a situation where you try to start without a compensation requirement, losses in market value operate as a lower boundary on the estimation on the damages to be paid. Therefore, people are going to have to put, as the old expression goes, their money where their mouth is. While talk is always cheap, actual dollars aren't. The revelations are more painful than we sometimes acknowledge.

Second, when I talked about nuisances, it should be clear that I did not commit myself to damages as the sole remedy in all cases. One of the reasons I've always liked injunctions is that they prevent a defendant from getting away with murder by a systematic underestimation of the total losses in question. It seems to me that that insight is 100% correct. Now what does that prove? It does not prove that you can enjoin the government when it is prepared to pay compensation. But it does suggest that in calculating the damages, you ought to take some multiple of market damages when you are figuring out the level of compensation that goes to the

4. *Village of Wilsonville v. SCA Services, Inc.*, 86 Ill. 2d 1, 426 N.E.2d 824 (1981).
<https://researchrepository.wvu.edu/wvlr/vol93/iss4/3>

afflicted community. By providing the bonus, that community will regard itself not merely as indifferent, but will regard itself as better off.

Going back to my earlier example: The market losses in Chicago were a billion dollars and the market losses of putting its waste in West Virginia were 200 million dollars with another 100 million dollars of subjective losses. My intuition is you want a four or five hundred million dollar compensation figure, so that the local recipients get some share of the overall social gain. You don't want a person to be a victim of forced government action on the one hand and left only indifferent after its imposition on the other. You want to make sure that the fellow who's moving the process is not going to capture all the net gains from its operation.

Now let me complete the picture. There is a reason why it is still plausible to make the system work even after the compensation awards are increased. One of the assumptions that you have to correct, I think, or at least fill out, from your hypothetical is this: we cannot assume that the sole losses from waste in Chicago are market losses, while the losses imposed by shipping the waste here are both market and subjective. There are also subjective dislocations in Chicago if the waste remains there. It follows, therefore, unless its local scene is radically different, that the billion dollar loss figure that I gave for decline in market value in Chicago understates its loss if the wastes remain. That loss figure should be higher too. If that's true, and I think it is true, then paying the extra compensation should be a little bit easier because the real gains that the Chicagoans get are larger than those couched exclusively in market terms. So even though I think we should start with the market value information, I'm perfectly aware that the measurability problems are severe.

Once that is done, then the compensation figure has to be increased to take into account other losses. In so doing, the substantial bottom line increases the reluctance of Chicago to ship its waste here, and gives it the incentive to find ways to reduce the total level of waste produced, to handle some of the disposal locally, to engage in other forms of waste treatment, and the like. Compensation rem-

edies do not only call for transfers *ex post*, they also lead to re-examinations of the way in which business is conducted. The payment also lowers the resistance to receipt and dampens the dispute. There is still an awful lot of play in the joints, and it may well be that in many cases the valuation problems swamp the gains that a transfer would receive. But in the absence of real precision, we should just do the best that we can.

Question 7: It seems to me that the greater the number of regulations, the smaller the degree of freedom, and the less control that individuals have in choosing and organizing their own lives. So I would think that the less and less regulation, almost without exception, would force individuals to make more and more decisions and I don't think that's the goal we are striving for.

Epstein: I have a lot of sympathy for your position, and if the subject before the House were whether or not we're going to regulate labor markets, then less is best, none is best of all. I can make my decisions whether to accept or reject the job without having to resort to majority vote. But when you are dealing with pollution, there are genuine public goods problems that you can't ignore. That dump site comes and is located in site X. Everybody's land nearby is going to be hurt by it, so there is a real bona-fide or tort-like externality. To leave the question of whether or not to accept it or reject the invitation to create a dump site to the single individual on whose land it is located is silly, indeed it is dangerous. The reason why the environment is such a tough nut to crack is that you are basically trying to run a system of markets without a clear system of property rights: one needs to establish a set of workable boundary lines for nuisance cases, and these are not going to be as simple as the old rules about ownership from the top of the skies to the center of the earth. Even the possibility of subsequent trades will not work to correct initial mistakes if the bundles of rights are not well defined.

Labor regulation for its part raises none of these problems because the principle of individual self-ownership provides us with the clear delineation of rights from which decentralized competitive markets can emerge. But where these markets are not strong, then there has to be at least some examination of the rules for regulation, as

with nuisances, and the rules for forced exchanges, as with solid waste disposal. The strong individualistic solutions will not work, much as I would like them to. For environmental questions, the real issues are going to be technique and control and as much as a libertarian as I am, I don't think you can start thinking about Twentieth Century problems on the assumption that Twelfth Century nuisance law was a mistake and that what we have to do is to sort of handle the tort problem by abolishing both it and the regulatory systems that supplant the replacing. I know that I could improve matters if given a free hand to revise the statute book, but I don't think that I could, in good conscience, close that statute book all together.

